Literature citations referenced in Opposing Views–Attachment 1 (Artley)

Opposing View #	Cited Literature	Forest Service Review/Response
1-1	Long, Richard D., U.S. Department of Agriculture Office of Inspector General **Western Region Audit Report: Forest Service National Fire Plan Implementation** *Report No. 08601-26-SF*, November 2001. http://www.usda.gov/oig/webdocs/08601-26-SF.pdf	This report presents the results of the Inspector General's 2001 review of the Forest Service's implementation of the National Fire Plan. This report has no relevance to the Houston South Vegetation Management and Restoration Project (Houston South).
1-2	Naeem, Shahid Ph.D., F.S. Chapin III Ph.D., Robert Costanza Ph.D., Paul R. Ehrlich Ph.D., Frank B. Golley Ph.D., David U. Hooper Ph.D. J.H. Lawton Ph.D., Robert V. O'Neill Ph.D., Harold A. Mooney Ph.D., Osvaldo E. Sala Ph.D., Amy J. Symstad Ph.D., and David Tilman Ph.D. **Biodiversity and Ecosystem Functioning: Maintaining Natural Life Support Processes.** Issues in Ecology No. 4. Fall 1999. http://cfpub.epa.gov/watertrain/pdf/issue4.pdf	Biodiversity would be maintained in this project by following Forest Plan standards and guidelines and project design features. The Forest Plan states for Management Area 2.8: "The desired condition of this area is to maintain 4 to 12 percent of the area in young forest habitat and up to an additional 3 percent as openings. The Forest manages the area primarily for plant and animal habitat diversity and timber harvest is an appropriate tool for use in this area." This project is implementing the Forest Plan.
1-3	**THE FACTS: Ending Timber Sales on National Forests** By Hansen, Chad, Ph.D., Published in the *Earth Island Journal*, June 22, 1999 https://www.questia.com/magazine/1G1-54451556/the-facts-ending-logging-on-national-forests	The cited article is a commentary in support of ending timber harvest on National Forest System lands. Vegetation treatments in the Houston South project are consistent with and implements the Forest Plan. Restoration objectives and supported by scientific principles.
1-4	**Forest Service Approves Habitat Destruction in Sierra Nevada Roadless Area---*Decision Allows Post-fire Logging in Habitat Occupied by Rare West Coast Fishers*** Published by the Center for Biological Diversity, April 29, 2016 https://www.biologicaldiversity.org/news/press_releases/2016/fisher-04-29-2016.html	The article is not relevant to the Hoosier National Forest. The Hoosier National Forest does not have habitat for West Coast Fishers nor does it contain inventoried roadless areas.
1-5	Hanson, Chad, Ph.D. **National Forest Protection** Environment Now (see picture on last page) http://www.environmentnow.org/forest.html	Opinion piece. This article is largely based on California examples that are not relevant to southern Indiana.
1-6	**Forest Clearing in the Gray's River Watershed 1905-1996** By Mark G. Scott A research paper submitted in partial fulfillment of the requirements for the degree of MASTER OF SCIENCE in GEOGRAPHY Portland State University, 2001 http://www.markscott.biz/papers/grays/chapter1.htm	This article discusses how clearcutting in the Gray's River Watershed in south west Washington simplified forest diversity and adversely impacted ecological processes. This reference does not apply to Houston because the project proposes to remove nonnative pine and to move acres toward the desired condition described in the Forest Plan.

1-7	**Applying Ecological Principles to Management of the U.S. National Forests** Published in Issues in Ecology Number 6 Spring 2000 https://19january2017snapshot.epa.gov/watershedacademy/applying-ecological-principles-management-us-national-forests_.html	Forest Plan direction provides many standards and guidelines for the protection of resources including soils, water, wildlife, biodiversity, etc.
1-8	**Stop the Logging, Start the Restoration** By John Byrne Barry Published in the The Planet newsletter, June 1999, Volume 6, Number 5 http://vault.sierraclub.org/planet/199905/ecl1.asp	This non-peer reviewed article is an opinion piece advocating an end to commercial logging on federal lands. It has not been published in a scientifically peer reviewed outlet with known and replicated quality assurance and quality control processes.
1-9	**Audit Faults Forest Service on Logging Damage in U.S. Forests** By John H. Cushman Jr. Published in the New York Times, February 5, 1999 http://query.nytimes.com/gst/fullpage.html?res=9B00E2DF163BF936A35751C0A96F958260&sec=&spon=&pagewanted=print and http://www.ncpa.org/sub/dpd/index.php?Article_ID=12468	This 1999 article in the New York Times reported deficiencies in implementation of Forest Service timber sales between 1995 and 1998. This article is not pertinent to the environmental analysis of the Houston South project.
1-10	**National forest logging is bad business, study says** By Margot Higgins Posted on CNN.com-Nature, March 16, 2000 http://www.cnn.com/2000/NATURE/03/16/forest.logging.enn/index.html	The article is not site-specific to the Hoosier National Forest. The Forest Plan FEIS (2006) includes a detailed social and economic analysis (pages 3-274 to 3-295).
1-11	**Scientists Seek Logging Ban on U.S.-Owned Land** By Anne Ehrlich Ph.D., David Foster Ph.D. and Peter Raven Ph.D. Published in the New York Times, April 16, 2002 http://www.nytimes.com/2002/04/16/us/scientists-seek-logging-ban-on-us-owned-land.html	The citation is letter written in 2002 to then President Bush calling for an end to commercial logging on the National Forests and encouraging the development of a policy to restore forests. It This is not site-specific and does not dispute any specific aspect of the Houston South environmental analysis. The Houston South project is consistent with, and implements, the Forest Plan's Desired Condition of Management Area 2.8.
1-12	**Simplified Forest Management to Achieve Watershed and Forest Health: A Critique** By Jerry Franklin Ph.D., David Perry Ph.D., Reed Noss Ph.D., David Montgomery Ph.D. and Christopher Frissell Ph.D. 2000. http://coastrange.org/documents/forestreport.pdf	This is a Forest Plan level subject. The Hoosier's Forest Plan identifies lands withdrawn from timber production and lands not appropriate for timber production.
1-13	**Forging a Science-Based National Forest Fire Policy** By Jerry F. Franklin Ph.D. and James K. Agee Ph.D. Published in Issues in Science and Technology. Fall 2003	The article provides considerations for the development of a national forest fire policy, which is beyond the scope of the Houston South project.

	A National Wildlife Federation publication sponsored by the Bullitt Foundation http://issues.org/20-1/franklin/	
1-14	**Rushing to stop a fire that never came, Forest Service logged miles of big trees, critical habitat** Published on the Seattle Times, August 9, 2016 http://projects.seattletimes.com/2016/collateral-damage/	This Seattle Times article reports on a controversial fire line cut in the Okanogan-Wenatchee National Forest is irrelevant to the Houston South project.
1-15	**Protection of Post-Fire Habitat** Published by the John Muir project, 2014 http://johnmuirproject.org/forest-watch/post-fire-habitat/	The Houston South project does not propose post-fire salvage logging.
1-16	**Forest Service Timber Sale Practices and Procedures: Analysis of Alternative Systems** By Gorte, Ross W. Ph.D. Published by the Library of Congress. A Congressional Research Service, October 30, 1995. https://digital.library.unt.edu/ark:/67531/metacrs233/	This is not applicable to analysis of the environmental effects of the proposed actions. It is not site-specific and does not dispute any specific aspect of the Houston South environmental analysis.
1-17	**The Big Lie: Logging and Forest Fires** By Hanson, Chad Ph.D. Published in the Earth Island Journal, spring 2000 issue http://yeoldeconsciousnessshoppe.com/art6.html	The citation is an opinion commentary written by the then national director of the Sierra Club in support of a bill that was before Congress at the time (National Forest Protection and Restoration Act) to end commercial logging on all federal public lands.
1-18	**Distribution of Ectomycorrhizae in a Mature Douglas-fir/larch Forest Soil in Western Montana** By A.E. Harvey, M. J. Larsen, and M. F. Jurgensen Published in Forest Science, Volume 22, Number 4, 1 December 1976, pp. 393-398(6) https://www.researchgate.net/publication/233704894_Distribution_of_Ectomycorrhizae_in_a_Mature_Douglas-firLarch_Forest_Soil_in_Western_Montana	The study and its conclusions are specific to ectomycorrhizae of the Douglas-fir/larch timber type of western Montana and are not relevant to the hardwood forests of southern Indiana.
1-19	**Shifting Public Values for Forest Management: Making Sense of Wicked Problems** By Dr. Bruce Shindler, Department of Forest Resources, and Dr. Lori A. Cramer, Department of Sociology, Oregon State University Reprinted from the Western Journal of Applied Forestry, Vol. 14, No. 1, January 1999. https://andrewsforest.oregonstate.edu/sites/default/files/lter/pubs/pdf/pub2465.pdf	This paper examines what shifting social values mean for forest management and research. Perhaps relevant at the Forest Plan level, it is not site-specific, and does not dispute any specific aspect of the Houston South environmental analysis
1-20	House Bill H. R. 1494 text. April 4, 2001 http://www.ontheissues.org/House/Bill_Luther_Environment.htm	H.R. 1494 was a bill submitted to Congress to prohibit commercial logging on federal lands and restore native biodiversity and natural ecological complexes and processes. This bill did not become law.

1-21	**From Prairie Dogs to Oysters: How Biodiversity Sustains Us** By Hudak, Mike Ph.D. from his book review of The Work of Nature: How the Diversity of Life Sustains Us by Yvonne Baskin, 1997 Published in the Newsletter of Earth Day Southern Tier, February/March 1999, p. 2 http://www.mikehudak.com/Articles/FromPrairieDogs9902.html	The citation is a review of the book "The Work of Nature: How the Diversity of Life Sustains Us" by Yvonne Baskin. It is true that human beings have manipulated the environment since the beginning of their existence, sometimes with unintended consequences. The Houston South project does not propose any of the actions identified in the book review.
1-22	**Cut and Run: Loggin' Off the Big Woods** By Mike Monte Paperback – June 1, 2002 https://www.amazon.com/Cut-Run-Loggin-Off-Woods/dp/0764315293/ref=cm_cr_arp_d_product_top?ie=UTF8	The link provided goes to Amazon.com where one can purchse the book. To the extent the book review can be evaluated, it appears to document logging in the Great Lakes region from the 1880s to the 1940s. Relevance to the Central Hardwood forests of Southern Indiana cannot be made.
1-23	**The Effects of Linear Developments on Wildlife: A Review of Selected Scientific Literature** By M.G. Jalkotzy, P.I. Ross, and M.D. Nasserden Prepared for Canadian Association of Petroleum Producers. Arc Wildlife Services Ltd., Calgary. 115pp, 1997 http://www.arlis.org/docs/vol1/A/65937142.pdf	A large majority of the species addressed by this document do not exist in Indiana or the project area (e.g. Grizzly bears and wolverines). Any rare, Federally or State listed species occurring within the Houston Sputh project area was addressed and evaluated to determine potential impacts and protective measures.
1-24	**Effects of Human-Induced Changes on Hydrologic Systems** By Elizabeth T. Keppeler, Robert R. Ziemer Ph.D., and Peter H. Cafferata An American Water Resources Association publication, June 1994 http://www.fs.fed.us/psw/publications/ziemer/Ziemer94a.PDF	This study addresses hillslope drainage processes by comparing pre- and postharvest pore pressure levels and soil moisture conditions on a steep hillslope within a zero-order basin in coastal northwestern California. The Houston South project incorporates design measures, BMPs and riparian area protections as monitoring during implementation to assure there would be no effects to these resources.
1-25	**Logging Effects on Amphibian Larvae Populations in Ottawa National Forest** Al Klein, University of Notre Dame, 2004 http://underc.nd.edu/assets/216499/fullsize/klein2004.pdf	Although the title of the cited article infers that the effects of logging were studied, only 'pre-logging' data was collected in seven vernal ponds in Michigan's Upper Peninsula. No post-logging data was collected; therefore, no conclusions regarding the effects of logging on amphibians can be drawn from this article. Implementation of Forest Plan standards and guidelines as well as BMPs would provide protection to aquatic habitats.
1-26	**Call for 'Sustainability' in Forests Sparks a Fire Science** By Charles C. Mann Ph.D. and Mark L. Plummer Ph.D.	The comment is not site-specific and does not dispute any specific aspect of the Houston South environmental analysis. The reference is beyond the scope of the project. The Houston South

	Published in Science 26 March 1999: Vol. 283. no. 5410, pp. 1996 – 1998 http://www.sciencemag.org/content/283/5410/1996.summary	project is consistent with all laws, regulations and policies governing the management of the National Forests.
1-27	**The Seen and Unseen World of the Fallen Tree** By C. Maser Ph.D., and J. M. Trappe Ph.D. USDA Forest Service, GTR-PNW-164, 1984 http://www.fs.fed.us/pnw/publications/pnw_gtr164/	This study is mainly in reference to the Douglas-fir dominated ecosystems of the Pacific Northwest and the importance of large woody debris on the forest floor. The Hoosier National Forest does not have Douglas-fir as a forest component. However, the Houston South project incorporates Forest Plan guidance to ensure that an adequate coarse woody debris remains after timber harvesting and other proposed activities.
1-28	**The Forest to the Sea: A Story of Fallen Trees** By C. Maser Ph.D., R. F. Tarrant, J. M. Trappe Ph.D., and J. F. Franklin Ph.D. USDA Forest Service, GTR-PNW-GTR-229, 1988 http://www.fs.fed.us/pnw/publications/pnw_gtr229/	This paper focuses on the importance of decaying coarse woody debris residues in providing diversity for ecosystem processes in Coastal Range of Oregon, a different ecosystem than those present on the Hoosier National Forest. See 1-27 above.
1-29	**Management history of eastside ecosystems: changes in fish habitat over 50 years, 1935-1992** By B.A. McIntosh, J.R. Sedell, J.E. Smith, R.C. Wissmar, S.E. Clarke, G.H. Reeves, and L.A. Brown USFS Pacific Northwest Research Station, GTR-321 93-181, 1994 http://www.fs.fed.us/pnw/publications/pnw_gtr321/	This general technical report documents damage to aquatic habitats through siltation and increased water temperature from past management (1935-1992) in eastern Oregon and Washington. The results of this study are specific to the watersheds examined. The Houston South project incorporates Forest Plan standards and guidelines, project design features, and BMPs to protect aquatic habitats.
1-30	**The Alsea Watershed Study: Effects of Logging on the Aquatic Resources of Three Headwater Streams of the Alsea River, Oregon – Part III** By John R. Moring Ph.D. Fishery Report Number 9, Oregon Department of Fish and Wildlife, 1975 http://www.for.gov.bc.ca/hfd/library/ffip/Moring_JR1975b.pdf	This article was written in 1975, prior to the advent of Best Management Practices. The study reviewed clearcut logging conducted in the mid-1960s in coastal Oregon. The Houston South project incorporates Forest Plan standards and guidelines, project design features, and BMPs to protect aquatic habitats.
1-31	**THE MISMANAGEMENT OF THE NATIONAL FORESTS** By Perri Knize Published on the Atlantic Monthly, October 1991 https://andrewsforest.oregonstate.edu/sites/default/files/lter/pubs/pdf/pub3296.pdf	This is an opinion piece, not science, from 28 years ago.
1-32	**Forests as Human-Dominated Ecosystems** By Ian R. Noble and Rodolfo Dirzo Ph.D. Published in Science Vol. 277. No. 5325, pp. 522 - 525. 25 July 1997. http://www.sciencemag.org/content/277/5325/522.abstract?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=log	This article discusses the change in and loss of forested acres on a world-wide scale, different types of forest management practices, and the use of sustainable forestry. The Houston South project is consistent with Forest Plan management direction for management areas within the project area.

	ging&searchid=1136659907310_5043&FIRSTINDEX=0&journalcode=sci	
1-33	**Judge blocks Klamath logging plan** By Don Thompson Publoshed by the Environmental Protection Information Center (EPIC), October 16, 2004 http://www.wildcalifornia.org/media/epic-in-the-news/judge-blocks-klamath-logging-plan/	This article discusses a court decision involving the Klamath National Forest in California. There is no relevance to the Houston South project.
1-34	**Judge stops 3 Montana logging projects over lynx** By Matt Volz, Associated Press June 26, 2013 http://news.yahoo.com/judge-stops-3-montana-logging-141919567.html	There is no lynx habitat on the Hoosier National Forest.
1-35	**From a 1998 letter to congress** By Peter Raven, Ph.D., Jane Goodall, C.B.E., Ph.D., Edward O. Wilson, Ph. D. and over 600 other leading biologists, ecologists, foresters, and scientists from other forest specialties. Published by Save America's Forests http://www.saveamericasforests.org/resources/Scientists.htm	This 1998 letter to Congress is an editorial/opinion piece signed by advocates of the Act to Save America's Forests. The Houston South project does not include areas with ancient forests or roadless areas.
1-36	**from a February 9, 2001 letter to Senator Jean Carnahan** By Peter Raven, Ph.D., http://www.saveamericasforests.org/Raven.htm	This citation is from a letter that supported the 2001 proposed Act to Save America's Forests Legislation. The proposed legislation did not become law; thus, this article is not relevant to site-specific project analysis.
1-37	**TIMBER HARVEST AND VEGETATION MANAGEMENT ACTIVITIES LAHONTAN REGION**, Published by the CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, April 10, 2014 http://www.swrcb.ca.gov/lahontan/water_issues/programs/waste_discharge_requirements/timber_harvest/docs/timber_waiver/2014tw.pdf	The issuance of waste discharge permits on timber harvest and vegetation management activities in the Lahontan Region of California has no relevance to the Houston South project in Indiana. Forest Plan standards and guidelines, BMPs, and project design measures would minimize the potential for sediment delivery.
1-38	**Physicians of the Forest": A Rhetorical Critique of the Bush Healthy Forest Initiative** By Brant Short Ph.D. and Dayle C. Hardy-Short Ph.D. Published in UCLA's Electronic Green Journal, Issue #19, December 2003 http://escholarship.org/uc/item/4288f8j5	This article is not applicable to the Houston South project because the project does not propose to apply the Healthy Forest Initiative.
1-39	**Judge Halts Glacier Loon Timber Sale in Swan Valley** Published in the Flathead Beacon, Sep 26, 2014 http://flatheadbeacon.com/2014/09/26/judge-halts-glacier-loon-timber-sale-swan-valley/	This article discusses a lawsuit filed by conservation groups against the Forest Service in western Montana. There are no grizzly bears, lynx, wolverines, elk, bull trout, or water howellia

		located on the Hoosier National Forest. This article has no relevance to the Houston South project.
1-40	**Assessment of the Geomorphic Impacts of Forestry in British Columbia** By Olav Slaymaker Ph.D. Published in AMBIO: A Journal of the Human Environment 29(7):381-387. 2000 http://www.bioone.org/doi/abs/10.1579/0044-7447-29.7.381	This peer-reviewed document is an assessment of geomorphic impacts of forestry in British Columbia. It describes potential impacts to hydrology, fluvial geomorphology, terrain stability, and integrated watershed impacts. The quotation in Opposing Views - Attachment 1 includes part of the abstract for this document but neglects to include the conclusion: "The Forest Practices Code (1995) is a significant step towards sustainable management of the land in so far as it attempts to minimize these geomorphic impacts of forest in B.C." The referenced code was composed of more stringent environmental standards and a common set of rules for industry throughout the province. The Houston South project applies standards and rules in the form of Forest Plan standards and guidelines, Indiana BMPs, and project design features. These would be followed to minimize effects to water and other resources. The Houston South EA discusses effects to soil and water resources in Issues 2, 3, and 4.
1-41	Timber Harvest Opposing View This link contains photos of logging around the world. Can you guess which 7 were taken of the after-effects of a timber sale in national forest land? http://www.bing.com/images/search?q=logging+impact+on+environment&qpvt=logging+impact+on+environment	This comment is not site-specific and does not dispute any specific aspect of the Houston South environmental analysis.
1-42	**Effect of logging on subsurface pipeflow and erosion: coastal northern California, USA** By Robert R. Ziemer Ph.D., an employee of the Pacific Southwest Research Station,,USDA Forest Service Proceedings of the Chengdu Symposium, July 1992. IAHS Publication. No. 209, 1992 http://www.fs.fed.us/psw/publications/ziemer/Ziemer92.PDF	This study about potential sediment flow and subsurface water flow and potential changes from logging in coastal Northern California is not applicable to the Hoosier National Forest given the differences in climate and vegetation. The Houston South EA provides an analysis of effects to soil and water resources.
1-43	**Open Letter to U.S. Senators and President Obama from Scientists Concerned about Post-fire Logging and Clearcutting on National Forests.** September 2015 Signed by 266 Ph.D. scientists http://johnmuirproject.org/wp-content/uploads/2015/09/Final2015ScientistLetterOpposingLoggingBills.pdf	This is opinion letter sent to U.S. Senators and President Obama regarding S. 1691 and is relevant to the Houston South environmental analysis.

1-44	**Statement at a Press Conference with Senator Robert Torricelli about S. 977 and HR 1376), the Act to Save America's Forests** By Partridge, Arthur Ph.D., professor emeritus, University of Idaho April 28, 1998, U.S. Capitol http://www.saveamericasforests.org/news/ScientistsStatement.htm	These are statements from scientists to Congress requesting passage of a bill, Act to Save America's Forests (S. 977 and HR 1376). This is opinion on broad policies and not applicable at the Forest or project level.
1-45	**The effects of forest management on erosion and soil productivity** By W.J. Elliot; Page-Dumroese, D.; Robichaud, P.R. 1999. Proceedings of the Symposium on Soil Quality and Erosion Interaction, Keystone, CO, July 7, 1996 Published by the USDA Forest Service Rocky Mountain Research Station http://forest.moscowfsl.wsu.edu/cgi-bin/engr/library/searchpub.pl?pub=1999c	The Houston South EA provides an analysis of effects to soil and water resources. Forest Plan standards and guidelines, Indiana BMPs, and project design features would be followed to minimize effects to long-term soil productivity.
1-46	**Conservationists sue over timber sale on Flathead's South Fork** By TRISTAN SCOTT of the Missoulian, Feb 29, 2012 http://missoulian.com/news/local/conservationists-sue-over-timber-sale-on-flathead-s-south-fork/article_c7b0e12e-6287-11e1-b6db-001871e3ce6c.html	There are no lynx, wolverine, grizzly bear, gray wolves, fisher, nor bull trout on the Hoosier National Forest. There is no designated critical habitat for any T&E species on the Hoosier National Forest.
1-47	WUERTHNER, GEORGE, **Why are Conservation Groups Advocating Logging Public Forests?** Published by Counterpunch, September 27, 2012 http://www.counterpunch.org/2012/09/27/why-are-conservation-groups-advocating-logging-public-forests/	This is an opinion piece about the author's disagreement with the pro-logging views of many conservation groups. It does not represent peer-reviewed science, and does not address, review or dispute any specific aspect of the Houston South EA.
1-48	**Deforestation** Published by National Geographic, 2017 http://www.nationalgeographic.com/environment/global-warming/deforestation/	The Houston South project area would remain forested, with a diversity of age class.
1-49	**Global Deforestation** Published by the University of Michigan http://resilience.earth.lsa.umich.edu/units/deforestation/index.html	See 1-48 above.
1-50	**Trees Are Our Climate Saviors - So Stop Logging on Public Land** The Huffington Post, 02/12/2014	This article is an opinion piece stating that President Obama should halt commercial logging on federal lands. This is beyond the scope of the Houston South project. The article also discusses carbon storage, which is addressed in the EA.

	http://www.huffingtonpost.com/ellen-moyer-phd/trees-are-our-climate-logging_b_4775894.html	
1-51	**Logging Impacts** Published by Sierra Forest Legacy, 2012 http://www.sierraforestlegacy.org/FC_FireForestEcology/FFE_LoggingImpacts.php	This nonscientific article discusses the impacts of logging. The comment is not site-specific to the Houston South project area and does not dispute any specific aspect of the environmental analysis.
1-52	**Pacific Salmonids: Major Threats and Impacts** Published by NOAA fisheries Office, May 15, 2014 http://www.agriculturedefensecoalition.org/sites/default/files/file/us_navy_new/271N_7_2014_NOAA_Pacific_Salmonids_Major_Threats_and_Impacts_Website.pdf	The Hoosier National Forest has no salmon populations; however, the Houston South project incorporates Forest Plan standards and guidelines, Indiana BMPs, and project design features, including riparian area buffers, to minimize effects to riparian resources.
1-53	**Logging in National Parks and Forests: A contentious Debate** By Joseph Palmisano Published by Law/Street, October 3, 2014 https://lawstreetmedia.com/issues/energy-and-environment/should-logging-be-encouraged-in-national-parks-and-forests-under-hr-1526/	This nonscientific article is not site-specific to the Houston South project area and does not dispute any specific aspect of the environmental analysis.
1-54	**Legislation Would Ban Logging On Federal Lands** By Mike Hudak published in EarthTimes, March/April 1998, p. 2 http://www.mikehudak.com/Articles/BillWouldEndLogging9803.html	The National Forest Protection and Restoration Act did not become a law. The article has no relevance to the Houston South project.
1-55	**Forest Service Plan Would Perpetuate Destruction of Tongass Old-Growth** Published by Earth Justice, June 30, 2016 https://earthjustice.org/news/press/2016/forest-service-plan-would-perpetuate-destruction-of-tongass-old-growth	The Tongass Land Management Plan has no relevance to the Hoosier National Forest or the Houston South project.
1-56	**'Collaborative' logging proposal destroys wildlife habitat** Published by Helena Independent Record, March 6, 2012 http://helenair.com/news/opinion/collaborative-logging-proposal-destroys-wildlife-habitat/article_fce056bc-675b-11e1-862b-0019bb2963f4.html	Collaborative groups in northwest Montana and logging in bull trout, lynx and grizzly bear critical habitat has no relevance to southern Indiana or the Houston South project.
1-57	**Logging Damage** Posted online by Lakeland University, January 08, 2001 http://flash.lakeheadu.ca/~carbon/Nlgdm.htm	Harvesting systems used in Ontario, Canada has no relevance to southern Indiana or the Houston South project.
1-58	**Protect Our National Forests From an Increase in Logging** By Jim Scheff Published by Counterpunch, June 18, 2018	This opinion piece on the management of the Danial Boone National Forest has no relevance to the Houston South project.

	https://www.counterpunch.org/2018/06/18/protect-our-national-forests-from-an-increase-in-logging/	
1-59	**The Destruction of America's Last Wild Forests** Published by Save America's Forests, 1998 http://www.saveamericasforests.org/resources/Destruction.htm	This article discusses the Act to Save America's Forests. This bill was introduced but not passed into law.
1-60	**Streams, Landslides, Logging, Roads and Rain** Published by Northwest Environment Watch, 1996 http://members.efn.org/~jpreed/landsl.html	Unable to open link provided. The Houston South project incorporates Forest Plan standards and guidelines, Indiana BMPs, and project design features, including riparian area buffers, to minimize effects to riparian resources.
1-61	**Stop Thinning Forests** http://stopthinningforests.org/forest-service-history.html	This nonscientific information is not site-specific to the Houston South project area and does not dispute any specific aspect of the environmental analysis.
1-62	**Logging vs. Recreation** BY GRAHAM AVERILL PUBLISHED BY BLUE RIDGE OURDOORS, 01 JUL 08 https://www.blueridgeoutdoors.com/magazine/july-2008/logging-vs-recreation/	This nonscientific information is not site-specific to the Houston South project area and does not dispute any specific aspect of the environmental analysis.
1-63	**National Forest Logging Costs Outweigh Benefits** Published by the Environmental News Service, March 13, 2000 http://www.ens-newswire.com/ens/mar2000/2000-03-13-06.html	The information on this website is not site-specific to the Houston South project area and does not dispute any specific aspect of the environmental analysis. The Houston South project is consistent with, and implements, the Forest Plan.
1-64	**Potential Effects of Forestry on Aquatic Ecosystems** Published by Regional Aquatics Monitoring Program http://www.ramp-alberta.org/resources/forestry/potential+effects.aspx	Implementation of Forest Plan standards and guidelines as well as BMPs would provide protection to aquatic habitats.
1-65	**Logging pollution and Clean Water Act** By George Wuerthner Published by the Wildlife News, May 21, 2013 http://www.thewildlifenews.com/2013/03/21/logging-pollution-and-clean-water-act/	Implementation of Forest Plan standards and guidelines, BMPs, and project design measures would provide protection to water quality.
1-66	**Logging Creates Habitat Destruction and Endangered Species** By Joy Foy Published in the Sentinel, September 1, 2012 https://watershedsentinel.ca/articles/logging-creates-habitat-destruction-and-endangered-species/	This article is specific to British Columbia, Canada. However, Threatened and Endangered species and Regional Foresters sensitive species were analyzed in biological evaluations and summarized in the Environmental Assessment,

1-67	**Habitat Loss, Fragmentation, and Destruction** By Laura Klappenbach Published by ThoughtCo, May 2, 2018 https://www.thoughtco.com/habitat-loss-fragmentation-and-destruction-130129	This nonscientific information is not site-specific to the Houston South project area and does not dispute any specific aspect of the environmental analysis.
1-68	**LOGGING: CUTTING DOWN WILDLIFE HABITATS** Published by World Animal Foundation, 2018 http://www.worldanimalfoundation.org/articles/article/8949999/186689.htm	This nonscientific article is not site-specific to the Houston South project area and does not dispute any specific aspect of the environmental analysis.
1-69	**Habitat destruction** The Wikipedia definition https://en.wikipedia.org/wiki/Habitat_destruction	The Houston South Vegetation Management and Restoration Project proposed action is based on and would fulfill Forest Plan direction associated with the goal of maintaining and restoring sustainable ecosystems.
1-70	**Effects of Clear Cutting** By Megan Stubblefield Published by https://greenliving.lovetoknow.com/environmental-issues/effects-clear-cutting	The Houston South project proposes clearcuts for the conversion of non-native pine to native hardwoods and providing habitat for early successional forest species. Environmental effects have been analyzed ab disclosed in the EA.
1-71	**Finding Solutions to Habitat Loss** Published by Partners in Flight, January 2002 http://eeinwisconsin.org/content/eewi/101706/HabitatLossSolutions.pdf	This article is not site-specific to the Houston South project area and does not dispute any specific aspect of the environmental analysis. The project proposes to create early successional forest habitat and is supported by the American Bird Conservancy.
1-72	**Habitat destruction: death by a thousand cuts** By William F. Laurance Published by Conservation Biology, 2010 https://conbio.org/images/content_publications/Chapter4.pdf	The Houston South Vegetation Management and Restoration Project proposed action is based on and would fulfill Forest Plan direction associated with the goal of maintaining and restoring sustainable ecosystems.
1-73	**What is a Habitat?** Published on Earth Eclipse, 2018 https://www.eartheclipse.com/ecosystem/reasons-for-habitat-loss-and-destruction.html	This article is not site-specific to the Houston South project area and does not dispute any specific aspect of the environmental analysis.

Literature citations referenced in Opposing Views–Attachment 4 (Artley)

Opposing View #	Cited Literature	Review/Response
4-1	**What do we know about Roads?** By Reid, Leslie M. Ph.D., Robert R. Ziemer Ph.D., USDA Forest Service Pacific Southwest Research Station, and Michael J. Furniss, USDA Forest Service Six Rivers National Forest, 1994 http://www.fs.fed.us/psw/publications/reid/4Roads.htm	The concepts discussed in the opposing view are all well understood by the Forest Service and were considered in the environmental effects analysis in the EA and Effects to Transportation specialist report.
4-2	**Forest Fragmentation and Roads** Published by the Eastern Forest Environmental Threat Assessment Center, October 17, 2017 U.S. Forest Service - Southern Research Station https://forestthreats.org/products/publications/su-srs-018/fragmentation	The provided reference is a webpage from a Forest Health Monitoring National Technical Report from the Southern Research Station of the USDA Forest Service. This document discusses the effects of roads related to habitat fragmentation across the U.S. It is general in nature. The paper is not site-specific to the Houston South project area and does not dispute any specific aspect of the environmental analysis.
4-3	**Source Habitats for Terrestrial Vertebrates of Focus in the Interior Columbia Basin: Broad-Scale Trends and Management Implications Volume 2 – Group Level Results** By Wisdom, Michael J., Richard S. Holthausen Ph.D., Barbara C. Wales Ph.D., Christina D. Hargis Ph.D., Victoria A. Saab Ph.D., Danny C. Lee Ph.D., Wendel J. Hann Ph.D. Terrell D. Rich, Mary M. Rowland,, Wally J. Murphy, and Michelle R. Eames Published by the USDA Forest Service in PNW-GTR-485, May 2000 https://www.fs.usda.gov/treesearch/pubs/3081	This large multi-agency effort defined habitat requirements and assessed trends in these habitats for terrestrial vertebrates across 145 million acres of public and private lands. They also summarized knowledge about species-road relationships and described the results in relation to broad-scale patterns of road density. Road construction and reconstruction were considered in the environmental analysis in the EA and Effects to Transportation specialist report.
4-4	**Erosion on logging roads in northwestern California: How much is avoidable?** By McCashion, J. D. and R. M. Rice Ph.D. Journal of Forestry 8(1): 23-26, 1983 https://www.fs.usda.gov/treesearch/pubs/3445	This 36-year old research paper was prepared in a time before modern Best Management Practices had been developed, tested, and proved to provide superior reductions in sediment delivery to streams. Implementation of Forest Plan standards and guidelines, BMPs, and project design measures would provide protection to water quality.
4-5	**Forest Road Erosion, Sediment Transport and Model Validation in the Southern Appalachians** By Dr. Mark S. Riedel, Research Hydrologist, USDA Forest Service, Otto, NC, and	The concepts discussed in the opposing view are all well understood by the Forest Service and were considered in the environmental effects analysis.

	Dr. James M. Vose, Project Leader, USDA Forest Service, Otto, NC Presented at the Second Federal Interagency Hydrologic Modeling Conference, July 28 – August 1, 2002. http://www.srs.fs.usda.gov/pubs/ja/ja_riedel002.pdf	
4-6	**Effects of forest roads on habitat quality for Ovenbirds in a forested landscape** By Ortega, Yvette K.; USFS ecologist, Rocky Mountain Research Station, Missoula Montana, and Capen, David E. Published in Auk. 116(4): 937-946, 1999 https://www.fs.usda.gov/treesearch/pubs/28532	Birds on the Regional Foresters sensitive species (RFSS) were analyzed in a biological evaluation and summarized in the Environmental Assessment. Ovenbird is not on the RFSS list.
4-7	**Hydrological processes and pathways affected by forest roads: what do we still need to learn?** By Luce, Charles H. Ph.D., USFS, Rocky Mountain Research Station, Boise Aquatic Sciences Laboratory, 2002 https://www.fs.usda.gov/treesearch/pubs/23954	This commentary piece on forest road hydrology was written to call for prioritizing research in the areas of the effects of roads on hillslope hydrological functions and on the effectiveness on eliminating the effects of roads during restoration activities. Effects of road construction/reconstruction were analyzed in the EA.
4-8	2003**. "Minimizing the impacts of the forest road system."** By Grace, Johnny M. III Ph.D., Research Engineer, Southern Research Station, USDA Forest Service Published in the Proceedings of the conference 34 international erosion control association; ISSN 1092-2806. http://www.srs.fs.usda.gov/pubs/ja/ja_grace011.pdf	Study conducted in Alabama on 4 methods for filtering sediment from roads to limit its delivery to streams. The study cites several very old research articles that formed the basis for the modern Best Management Practices used today.
4-9	**Sediment Plume Development from Forest Roads: How are they related to Filter Strip Recommendations?** By J McFero Grace III, USFS research engineer, US Forest Service, G.W. Andrews Forestry Sciences Lab An ASAE/CSAE Meeting Presentation, Paper Number: 045015, August 1-4, 2004. http://www.srs.fs.usda.gov/pubs/ja/ja_grace017.pdf	The referenced material discusses the effects of filter strips and their use to control sedimentation. Implementation of Forest Plan standards and guidelines, BMPs, and project design measures would provide protection to soil and water. Indiana BMPs directs us to maintain an undisturbed buffer strip between forest roads and streams.
4-10	**Effects of Roads on Elk: Implications for Management in Forested Ecosystems** By Mary M. Rowland, U. S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Michael J. Wisdom,U. S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Bruce K. Johnson, Oregon Department of Fish and Wildlife, and Mark A. Penninger U. S. Department of Agriculture, Forest Service, Wallowa- Whitman National Forest.	Elk are not present on the Hoosier National Forest.

	Published in the Transactions of the 69'"North American Wildlife and Natural Resources Conference, March 16 to 20, 2004 http://www.fs.fed.us/pnw/pubs/journals/pnw_2004_rowland001.pdf	
4-11	**Watershed's Response to Logging and Roads: South Fork of Caspar Creek, California, 1967-1976** Rice, Raymond M. Ph.D., Forest B. Tilley and Patricia A. Datzman. USDA Forest Service, Research Paper PSW-146, 1979 http://www.fs.fed.us/psw/publications/rice/Rice79.pdf	This 40-year old research paper was prepared in a time before modern Best Management Practices had been developed, tested, and proved to provide superior reductions in sediment delivery to streams. Implementation of Forest Plan standards and guidelines, BMPs, and project design measures would provide protection to water quality.
4-12	**Soil losses from roadbeds and cut and fill slopes in the Southern Appalachian Mountains** Swift Jr., L. W., research forester, USDA Forest Service, Southeastern Forest Experiment Station, Coweeta Hydrologic Laboratory, Reprinted from the Southern Journal of Applied Forestry 8: 209-216. 1984. http://cwt33.ecology.uga.edu/publications/403.pdf	The concepts discussed in the opposing view are all well understood by the Forest Service and were considered in the environmental effects analysis for the Houston South project.
4-13	**National Forest System Road Management** Federal Register: March 3, 2000 (Volume 65, Number 43) Page 11675 A Notice by the Forest Service on 03/03/2000, signed by USFS Chief Dr. Mike Dombeck on February 25, 2000 https://www.federalregister.gov/documents/2000/03/03/00-5002/national-forest-system-road-management	Notice of comment opportunity on Forest Service Road Management. Proposed strategy would have forests analyze new and existing roads for need, decommission those not needed, improve those roads needed to limit effects to resources. Houston South addresses all three topics.
4-14	**A Method for Measuring Sediment Production from Forest Roads** By Kahklen, Keith, the Natural Resources Manager for the Bureau of Indian Affairs Published by the Pacific Northwest Research Station, USDA Forest Service. Research note PNW-RN-529, April 2001. http://www.fs.fed.us/pnw/pubs/rn529.pdf	The geomorphology and climate of the Pacific Northwest are completely different from that of southern Indiana and the Houston South project area. Implementation of Forest Plan standards and guidelines, BMPs, and project design measures would provide protection to water quality.
4-15	**Diversion Potential at Road-Stream Crossings** By Furniss, Michael J., Michael Love Ph.D. and Sam A. Flanagan Published by the USDA Forest Service. 9777 1814—SDTDC. December 1997. https://www.fs.fed.us/eng/pubs/html/wr_p/97771814/97771814.htm	Implementation of Forest Plan standards and guidelines, BMPs, and project design measures would provide protection to aquatic habitat. Implementation of the proposed aquatic organism passages would help improve approximately 14 miles of upstream habitat.

4-16	**Forest Service Roads: A Synthesis of Scientific Information**, June 2000 Edited by: Hermann Gucinski, USFS, Pacific Northwest Research Station Corvallis, OR; Michael J. Furniss, USFS, Rocky Mtn Res. Station, Stream Systems Technology Center, Fort Collins, CO.; Robert R. Ziemer, USFS, Pacific Southwest Research Station, Arcata, CA Martha H. Brookes, USFS, Pacific Northwest Research Station, Portland https://www.fs.fed.us/eng/road_mgt/science.pdf	PNW-GTR-509 describes the effects roads have on ecosystems. The report details the known issues related to road impacts on physical and biological resources, road impacts at various scales, and the socio- economics of roads. The report then describes the known science surrounding these issues. The focus of the report is to help the reader understand how roads function in the landscape. The concepts discussed in the report are all well understood by the Forest Service and were considered in the environmental effects analysis in the EA.
4-17	Amaranthus, Mike P. Ph.D., Raymond M. Rice Ph.D., N. R. Barr and R. R. Ziemer Ph.D. **"Logging and forest roads related to increased debris slides in southwestern Oregon."** Journal of Forestry Vol. 83, No. 4. 1985. Dr. Ziemer was a Forest Service Research & Development employee before he retired https://www.fs.usda.gov/treesearch/pubs/7683	The geomorphology and climate of southwestern Oregon are completely different from that of southern Indiana and the Houston South project area. Implementation of Forest Plan standards and guidelines, BMPs, and project design measures would provide protection to soil and water.
4-18	**Applying Ecological Principles to Management of the U.S. National Forests** By John Aber Ph.D., Norman Christensen Ph.D., Ivan Fernandez, Jerry Franklin Ph.D., Lori Hidinger, Malcolm Hunter Ph.D., James MacMahon, David Mladenoff Ph.D., John Pastor, David Perry, Ron Slangen, Helga van Miegroet Ph.D. Issues in Ecology Number 6 Spring 2000 https://cfpub.epa.gov/watertrain/pdf/issue6.pdf	The Houston South project is consistent with the ecological principles listed in the cited article.
4-19	**Logging roads have long-lasting impacts on forests** Published by Mongabay, August 29, 2016 https://news.mongabay.com/2016/08/logging-roads-have-long-lasting-impacts-on-forests/	The article goes on to say, “But there is a way to mitigate the damage caused by logging roads by restoring them after an operation leaves a region…” All temporary and would be decommissioned when no longer needed. Road decommissioning would be accomplished using guidance from Forest Service Manual 7700, Chapter 7730. For the new road added to the current road system, standards and guidelines prescribed in the Forest Plan would be applied.
4-20	By Dr. Seth Reice, Associate Professor of Biology in the Department of Biology and Curriculum in Ecology, University of North Carolina.	This opinion commentary is in support of the Act to Save America’s Forests, which did not pass into law.

	From Press Conference with Senator Robert Torricelli, **April 28, 1998, U.S. Capitol** regarding the proposed **Act to Save America's Forests (**S. 977, HR 1376) http://www.saveamericasforests.org/news/ScientistsStatement.htm	
4-21	By Dr. David Montgomery, Associate Professor for the Department of Geological Sciences at the University of Washington. **From Press Conference with Senator Robert Torricelli, April 28, 1998, U.S. Capitol** regarding the proposed **Act to Save America's Forests** (S. 977, HR 1376) http://www.saveamericasforests.org/news/ScientistsStatement.htm	This opinion commentary discusses Forest Service policy at the national level and is beyond the scope of project level planning such as Houston South.
4-22	**Evaluating effects of large-scale salvage logging for mountain pine beetle on terrestrial and aquatic vertebrates.** Bunnell, Fred L. Ph.D., Kelly A. Squires and Isabelle Houde Mountain Pine Beetle Initiative Working Paper 1. Canadian Forest Service. 2004 https://www.for.gov.bc.ca/hfd/library/documents/bib92944.pdf	This reference pertains to beetle kill salvage logging in British Columbia. The Houston South project does not propose salvage logging.
4-23	**Some Effects of Logging and Associated Road Construction on Northern California Streams.** Burns, James W. Transactions of the American Fisheries Society, Volume 1, Number 1, January 1972. http://www.fs.fed.us/psw/publications/4351/Burns72.pdf	This study is based on road building practices of the 1960s. The Houston South project contains design measures, BMPs, and Forest Plan guidance to eliminate the problems present in this document.
4-24	**The Impact of Timber Harvest on Soil and Water Resources** Brown, George W. Ph.D. Dr. Brown is the Forest Hydrologist, School of Forestry, Oregon State University http://andrewsforest.oregonstate.edu/pubs/pdf/pub1695.pdf	The geomorphology and climate of Oregon are different from that of southern Indiana and the Houston South project area. Additionally, this article cites references from the late 1950s to the early 1970s, a time before modern Best Management Practices had been developed. Implementation of Forest Plan standards and guidelines, BMPs, and project design measures would provide protection to soil and water.
4-25	**Roads and their Major Ecological Effects** By Forman, Richard T. and Lauren E. Alexander Published in the Annual Review of Ecology and Systematics, Vol. 29: 207-231, November 1998	This document discusses road impacts to species at a national level including Europe and Australia. The effects from roads were considered in the environmental effects analysis.

	https://gis.lic.wisc.edu/wwwlicgf/glifwc/PolyMet/SDEIS/references/Forman%20and%20Alexander%201998.pdf	
4-26	**Simplified Forest Management to Achieve Watershed and Forest Health: A Critique**. Franklin, Jerry Ph.D., David Perry Ph.D., Reed Noss Ph.D., David Montgomery Ph.D. and Christopher Frissell Ph.D. 2000. A National Wildlife Federation publication sponsored by the Bullitt Foundation http://www.coastrange.org/documents/forestreport.pdf	Unable to open the provided link. The effects from road construction/reconstruction were considered in the environmental effects analysis.
4-27	**Logging Won't Halt Beetles, Fire, Report Says** Frey, David NewWest.net, 3-03-10 http://www.newwest.net/topic/article/logging_wont_halt_beetles_fire_report_says/C41/L41/	Provided link says website under construction. The Houston South does not proposed logging to halt beetles or fire.
4-28	**Battling beetles may not reduce fore risks – report** By Gable, Eryn, executive director of the Xerces Society for Invertebrate Conservation Published by Xerces Society for Invertebrate Conservation, March 4, 2010 http://www.xerces.org/2010/03/04/battling-beetles-may-not-reduce-fire-risks-report/	Article discusses mountain pine beetle epidemic in Colorado, not relevant to southern Indiana.
4-29	**Effects of Forest Roads on Macroinvertebrate Soil Fauna of the Southern Appalachian Mountains** Haskell, David G. Ph.D. Published in Conservation Biology, February 2000 http://onlinelibrary.wiley.com/doi/10.1046/j.1523-1739.2000.99232.x/abstract	The environmental effects of the existing road system and the proposed of new construction/reconstruction were considered in the Report for the Houston South Project Environmental Assessment - Effects to Transportation and Report for the Houston South Project Environmental Assessment - Effects to Soil and Water, both of which were summarized in the EA. Additionally, complying with the Eastern Region Soil Quality Standards would limit litter layer disturbance within the proposed harvest units.
4-30	**Road Development, Housing Growth, and Landscape Fragmentation In Northern Wisconsin: 1937–1999** By Hawbaker, Todd J. Ph.D., Volker C. Radeloff Ph.D., Murray K. Clayton Ph.D., Roger B. Hammer Ph.D., and Charlotte E. Gonzalez-Abraham Ph.D. Published in Ecological Applications: Vol. 16, No. 3, pp. 1222-1237. http://www.esajournals.org/doi/abs/10.1890/1051-0761%282006%29016%5B1222%3ARDHGAL%5D2.0.CO%3B2?journalCode=ecap	Unable to open link provided. This document pertains to road densities associated with housing development, not applicable the Houston South project.

4-31	**We're going out on a limb, and for what?** By Ivins, Molly Published in the Star-Telegram, August 2, 1997 http://www.metla.fi/archive/forest/1997/09/msg00017.html	This is an opinion piece on Congressional funding of road construction and supporting the timber industry. Article suggests that N.F. roads are paid for by tax payers. Access to the timber stand via road construction is an appraised cost to determine stumpage.
4-32	**Forest Roads and Sediment Project** By W. Mike Aust, Ph.D., Kevin McGuire, Ph.D., M. Chad Bolding, Ph.D. and Scott Barrett, Ph.D. Published by Virginia Tech University, 2017 http://hydro.vwrrc.vt.edu/research/projects/forest-roads-and-sediment-project/	This is an apparent ongoing project that proposed to directly measure surface runoff and sediment delivery ratios from forest roads during controlled field experiments in the Virginia Piedmont, and to evaluate WEPP model predictions for bare and graveled surfaces.
4-33	**Effects of roads on hydrology, geomorphology, and disturbance patches in stream networks** By: Jones, Julia A. Ph.D., Frederick J. Swanson Ph.D. Beverley C. Wemple Ph.D., and Kai U. Snyder. Published in Conservation Biology 14, No. 1. 2000. https://www.researchgate.net/publication/227626455_Effects_of_Roads_on_Hydrology_Geomorphology_and_Disturbance_Patches_in_Stream_Networks	The geomorphology and climate of Oregon are different from that of southern Indiana and the Houston South project area. Implementation of Forest Plan standards and guidelines, BMPs, and project design measures would provide protection to soil and water.
4-44	**Restoring Forest Roads** A Northern Arizona University Ecological Restoration Institute publication, 2017 https://nau.edu/ERI/Resources/For-Practitioners/Restoring-Forest-Roads/	Unable to open link provided. The Houston South project proposed to decommission approximately 3 miles of roads no longer needed.
4-45	**Cumulative effects of roads and logging on landscape structure in the San Juan Mountains, Colorado (USA)** By: McGarigal, Kevin Ph.D., William H. Romme Ph.D., Michele Crist Ph.D.and Ed Roworth Ph.D. Published in Landscape Ecology, Volume 16, Number 4 / May, 2001 http://www.springerlink.com/content/w12557624742tv77/	The study in the San Juan Mountains, Colorado, which have different soils, topography, climate, and forest types and forest conditions. A study in the mountains of Colorado is not in the context of the Hoosier National Forest in southern Indiana.
4-46	**Relationships between Human Industrial Activity and Grizzly Bears** Author(s): Bruce N. McLellan Source: Bears: Their Biology and Management, Vol. 8, A Selection of Papers from the Eighth International Conference on Bear Research and Management, Victoria, British Columbia, Canada, February 1989 (1990), pp. 57-64 Published by: International Association of Bear Research and Management	There are no grizzly bears in the Hoosier National Forest.

	http://www.bearbiology.com/fileadmin/tpl/Downloads/URSUS/Vol_8/McClellan_8.pdf	
4-47	**Predicting Road Surface Erosion from Forest Roads in Washington State** By Megahan, Walter F. Ph.D. from a presentation presented at the 2003 Geological Society of America meeting. http://gsa.confex.com/gsa/2003AM/finalprogram/abstract_67686.htm	This document discusses the Washington Surface Erosion Model used by the state of Washington, not relevant to Indiana.
4-48	**Statement at a Press Conference with Senator Robert Torricelli about S. 977 and HR 1376), the Act to Save America's Forests** By Montgomery, David Ph.D. April 28, 1998, U.S. Capitol http://www.saveamericasforests.org/news/ScientistsStatement.htm	See 4-21
4-49	**The Ecological Effects of Roads or the Road to Destruction** Noss, Reed F., Ph.D. Published by Wildlands CPR, 1995 https://www.wildwill.net/blog/2015/08/13/the-ecological-effects-of-roads/	This opinion piece discusses the effects of all roads in general and potential mitigation measures to reduce the effects. The comment is not site-specific and does not dispute any specific aspect of the Houston South environmental analysis
4-50	**Contribution of Roads to Forest Fragmentation in the Rocky Mountains** Reed, Rebecca Ph.D., Johnson-Barnard, Julia Ph.D., and Baker, William P.D. Published in Conservation Biology, August, 1996 http://onlinelibrary.wiley.com/doi/10.1046/j.1523-1739.1996.10041098.x/abstract	This study looked at habitat fragmentation in coniferous forests of Wyoming. This study is not relevant to the central hardwood forests of southern Indiana.
4-51	**Sediment Production from Forest Road Surfaces** By Reid, L. M. Ph.D. and T. Dunne Published in WATER RESOURCES RESEARCH, VOL. 20, NO. 11, PAGES 1753-1761, NOVEMBER, 1984 https://www.fs.fed.us/psw/publications/reid/psw_1984_reid001.pdf	This nearly 35-year old research paper was prepared in a time before modern Best Management Practices had been developed. Also, the study was in the Olympic Mountains of Washington State, not comparable to southern Indiana.
4-52	**Water Quantity and Quality in the Mountain Environment** Shanley, James B. and Beverley Wemple Ph.D. Published in the Vermont Law Review, Vol. 26:717, 2002 http://www.uvm.edu/~bwemple/pubs/shanley_wemple_law.pdf	This reference discusses hydrology in mountains. Southern Indiana has no mountains.

4-53	**Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities** By Trombulak, Stephen C. Ph.D. and Christopher A. Frissell Ph.D. Published in Conservation Biology, Volume 14, No. 1, Pages 18–30, February 2000 http://onlinelibrary.wiley.com/doi/10.1046/j.1523-1739.2000.99084.x/full	The citation is a general synthesis of some of the deleterious effects of roads on the natural environment. It is very broad based and while some of it pertains to conditions in the project area, it contains no specific information that can be used in the analysis.
4-54	**Habitat Fragmentation and the Effects of Roads on Wildlife and Habitats** Watson, Mark L., Habitat Specialist Conservation Services Division New Mexico Department of Game and Fish Background and Literature Review, January 2005. http://www.safepassagecoalition.org/resources/Habitat%20Fragmentation.pdf	For Houston South, roads are not a major contributor to habitat fragmentation because they would not divide large landscapes into smaller patches. Conversion of interior habitat into edge habitat would not occur. The area of Houston South would remain forested with a diversity of age classes. The effects of road construction/reconstruction were analyzed in the EA.
4-55	**Ecological Differences between Logging and Wildfire** By Wuerthner, George, forest ecologist and author Published in Wuerthner and the Environment, December 22, 2008 http://wuerthner.blogspot.com/2008/12/ecological-differences-between-logging.html	The concepts discussed in the opposing view are all well understood by the Forest Service and were considered in the environmental effects analysis in the EA.
4-56	**A Forest Divided** By Zimmerman, E.A. and P.F. Wilbur Published in the New Roxbury Land Trust newsletter, 2004 http://www.ourbetternature.org/forestfrag.htm	This non-scientific article discusses forest fragmentation in and the effects on aquatic and terrestrial resources. See 4-45.
4-57	**Clean Water Act's Next Role Could Play Out On NW Logging Roads** By Templeton, Amelia Published by Oregin Public Broadcasting, Aug. 15, 2012 http://www.opb.org/news/article/replumbing-the-forest/	Proposed road construction/reconstruction would follow Forest Plan guidance to protect streams and riparian areas.
4-58	**PREDICTING SEDIMENT DISCHARGE FROM FOREST ROADS: THE ROLE OF SURFACE RUNOFF AND RAINFALL INTENSITY** By: Joseph R. Amann, Hydraulic Engineer, WEST Consultants, Inc. and Dr. Arne Skaugset, Associate Professor, Department of Forest Engineering, Oregon State University https://www.gcmrc.gov/library/reports/physical/fine_sed/8thfisc2006/8thfisc/session%202a-1_amann.pdf	The provided link goes to the U.S. Geological Survey's Grand Canyon Monitoring and Research Center.

4-59	**Maintenance Cutbacks For Forest Roads Mean More Sediment For Streams** Stewart, Bonnie Oregon Public Broadcasting, Aug. 14, 2012 http://www.opb.org/news/article/budget-cuts-in-federal-forest-road-maintenance-hur/	This article discuses road needs and some examples of completed work on Forests in Washington and Oregon. The article provides no site-specific information of the Hoosier National Forest.
4-60	**Roads and Erosion** By Web, Kris Published in krisweb, 2011 http://www.krisweb.com/watershd/roads.htm	Neither salmon nor bull trout occur in the waters of the Hoosier National Forest. Proposed road construction/reconstruction would follow Forest Plan guidance to protect streams and riparian areas.
4-61	**AERIAL LANDSLIDE SURVEY OF MAPLETON RANGER DISTRICT FOLLOWING RAINSTORM OF FEBRUARY, 1996** February 14, 1996 Association of Forest Service Employees for Environmental Ethics http://members.epud.net/~jpreed/landsl.html	Unable to open link provided.
4-62	**Measuring Runoff and Sediment Production from Forest Roads** Published by Research Gate, April 2013 https://www.researchgate.net/publication/253328114_Measuring_Runoff_and_Sediment_Production_from_Forest_Roads	This study area was in the Patom district in the Kheyrud Forest Research Station of Tehran University in northern Iran.
4-63	**The Potential Effects of Forest Roads on the Environment and Mitigating their Impacts** Integrating Forestry in Land Use Planning (P Bettinger, Section Editor), October 3, 2016 https://link.springer.com/article/10.1007/s40725-016-0044-x	This article discusses potential environmental effects of forest roads and mitigation measures. Proposed road construction/reconstruction would follow Forest Plan guidance.
4-64	**MS Thesis-- SEDIMENT PRODUCTION AND DELIVERY FROM FOREST ROADS IN THE SIERRA NEVADA, CALIFORNIA** By Drew Bayley Rogers Coe, Spring 2006 http://www.bof.fire.ca.gov/board_committees/monitoring_study_group/msg_supported_reports/2006_supported_reports/drewcoe_finalthesis.pdf	Comparting sedimentation rates in the Sierra Nevada to southern Indiana would not add value to the Houston South analysis.
4-65	**Fine Sediment Deposition at Forest Road Crossings: An Overview and Effective Monitoring Protocol** John F. Rex Ph.D. and Ellen L. Petticrew Ph.D., University of Northern British Columbia Canada, 2011 http://cdn.intechweb.org/pdfs/20913.pdf	This article an overview of the effect that forestry generated fine sediment has on receiving stream biota and an effective protocol for measuring fine sediment levels at forest road stream crossings.

		The Houston South project plans to use the Forest Disturbance Monitoring Protocol; pre-harvest and post-harvest monitoring for stage, discharge and turbidity; and BMP monitoring.

Literature citations referenced in Opposing Views–Attachment 19 (Artley)

Insect Activity is a Beneficial Natural Disturbance Event in the Forest

Opposing View #	Cited Literature	Review/Response
19-1	Franklin, Jerry Ph.D., David Perry Ph.D., Reed Noss Ph.D., David Montgomery Ph.D. and Christopher Frissell Ph.D. **"Simplified Forest Management to Achieve Watershed and Forest Health: A Critique."** A National Wildlife Federation publication sponsored by the Bullitt Foundation, 2000 http://www.coastrange.org/documents/forestreport.pdf	The Houston South project proposes clearcuts on approximately 401 acres for the conversion of non-native pine to native hardwoods and providing habitat for early successional forest species.
19-2	Scott, Mark G. **"Forest Clearing in the Gray's River Watershed 1905-1996"** A research paper submitted in partial fulfillment of the requirements for the degree of MASTER OF SCIENCE in GEOGRAPHY Portland State University, 2001 http://www.markscott.biz/papers/grays/chapter1.htm	The cited paper is a review of timber harvest activities over 90 years within the Gray's River watershed located in coastal southwest Washington. Nearly all the land within the Gray River watershed is owned by private timber companies. The paper discusses the use of clearcutting and loss of old growth forests within the watershed. This article has no relevance to the Houston South project because the western Washington forests can not be compared to the central hardwood forests of southern Indiana.
19-3	Bandy, LeRoy Ph.D and Bandy, Barbara M.S.2004, "**The Case Against Intensive Forest Management in Maine"** http://www.forestecologynetwork.org/BANDY22.htm	This is not applicable to analysis of the environmental effects of the proposed actions. It is not site-specific and does not dispute any specific aspect of the Houston South environmental analysis.
19-4	Barnbaum, Bruce Ph.D., **"Understanding Forests and Protecting Timber Jobs"** The paper was written in 1992, and updated in 1998 and 2001. The link to this paper no longer works	With no way to view the article, it is not possible to consider it in its context.
19-5	"**What Is Clearcutting? This method of logging can destroy an area's ecological integrity."** An NRDC publication, May 2000 http://ssfourthgrade.wikispaces.com/file/view/What+Is+Clearcutting.pdf	The link states: "the site you are looking for no longer exists." Not possible to review.

19-6	All statements above are from a Press Conference with Senator Robert Torricelli, April 28, 1998, U.S. Capitol http://www.saveamericasforests.org/news/ScientistsStatement.htm	These are press conference statements concerning the Act to Save America's Forests. These opinion pieces discusse the effects of logging and road building on streams and terrestrial biodiversity and calls for a ban on clearcutting. These are not scientific peer-reviewed documents and are not applicable to the Houston South environmental analysis.
19-7	McMahon, Mary, Harris, Bronwyn **"Why is Clearcutting bad for the Environment?"** From wise GEEK, 2014 http://www.wisegeek.org/why-is-clearcutting-bad-for-the-environment.htm	This non-scientific article adds no value to the Houston South environmental analysis. It is not site-specific and does not dispute any specific aspect of the Houston South environmental analysis.
19-8	Schafer, Maggie, Molvar, Erik, **"Clearcutting: An Idea Whose Time has Passed** Published by Biodiversity Conservation Alliance, 2006 The link to this paper no longer works	With no way to view the article, it is not possible to consider it in its context.
19-9	Miller, Chris, **"Natural resources strategy calls for 50% reduction in clearcutting in 5 years"** Mr. Miller is a National Conservation Biologist Canadian Parks and Wilderness Society, 2011 http://cpawsns.org/news/natural-resources-strategy-calls-for-50-reduction-in-clearcutting-in-5-year	Forestry practices in Nova Scotia is not relevant to the Houston South project.
19-10	Clearcut Landslides in Douglas County An Umpqua Watershed publication, 1996 The link to this paper no longer works	With no way to view the article, it is not possible to consider it in its context.
19-11	Dahlgren, R.A. Ph.D., Driscoll, C.T. Ph.D., **"The effects of whole-tree clear-cutting on soil processes at the Hubbard Brook Experimental Forest, New Hampshire, USA"** Published in Plant and Soil, January 1994, Volume 158, Issue 2, pp 239-262 http://link.springer.com/article/10.1007%2FBF00009499	Because of the differences in topography, forest types, and climate, studies in New Hampshire cannot be compared with southern Indiana.
19-12	Steelman Toddi, Ph.D. **"The Monongahela Controversy and Decision"** An SAF publication, 2010 https://sites.google.com/site/forestryencyclopedia/Home/The%20Monongahela%20Controversy	This article describes the events that led to the passage of NFMA. It has no relevance to the Houston South project.
19-13	An NRDC publication The link to this paper no longer works	With no way to view the article, it is not possible to consider it in its context.
19-14	A Wikipedia definition of clearcutting Wikipedia is a trusted source for accurate information https://en.wikipedia.org/wiki/Clearcutting	Per the Forest Plan, clearcut harvests will be used when they are the optimum harvest method to achieve stated management objectives such as conversion of non-native pine to native

		hardwoods and providing habitat for early successional forest species.
19-15	**"Study: Forest Clearcuts Show Sustained Losses of Carbon, Surprising Trends in Water"** By: Clarisse Hart, Harvard Forest Outreach Manager, and Jane Salerno, Clark University Media Relations http://harvardforest.fas.harvard.edu/sites/harvardforest.fas.harvard.edu/files/Harvard%20Forest%20press%20release%20for%20101813_Williams%20et%20al.pdf	Site-specific carbon and greenhouse gas emissions were analyzed in the *Project Scale Carbon Effects – Houston South Project Environmental Assessment* and summarized in the EA.
19-16	**The Destruction of America's Last Wild Forests** A Save America's Forests publication, 1998 http://www.saveamericasforests.org/resources/Destruction.htm	This non-scientific article discusses the need for The Act to Save America's Forests. This bill was introduced but not passed into law.
19-17	**Effects of Clear Cutting** By Megan Stubblefield Published by Green Living http://greenliving.lovetoknow.com/environmental-issues/effects-clear-cutting	This article goes on to state the benefits of clearcutting: "In natural reforestation, plants that previously didn't grow underneath the forest canopy will thrive and provide new food sources for animals while encouraging new wildlife to move in. •Clearcut land provides an opportunity to create a bridge between two different habitats. This allows greater animal diversity within a given area. •Low -growing plants, grasses and briar thickets take over clearcut areas and provide a haven for smaller animals." Per the Forest Plan, clearcut harvests will be used when they are the optimum harvest method to achieve stated management objectives such as conversion of non-native pine to native hardwoods and providing habitat for early successional forest species.
19-18	**Clear-cutting destabilizes carbon in forest soils, study finds** Published by Phys.org, April 15, 2016 https://phys.org/news/2016-04-clear-cutting-destabilizes-carbon-forest-soils.html	Site-specific carbon and greenhouse gas emissions were analyzed in the *Project Scale Carbon Effects – Houston South Project Environmental Assessment* and summarized in the EA.
19-19	**Clearcutting in Oregon** http://www.clearcutoregon.com/private-land.html	The management of private forestlands in Oregon has no relevance to the Houston South project.
19-20	**Clearcut leaves 'big, ugly, bald spot' across from Wentworth ski hill** Aired by CBC Canada http://www.cbc.ca/news/canada/nova-scotia/clear-cut-cutting-wentworth-valley-northern-pulp-forestry-1.4171384	The views from a ski hill in Nova Scotia, Canada has no relevance to the Houston South project. Recreation and Visuals were analyzed in the Houston South EA.

19-21	**CLEARCUTTING AND CLIMATE CHANGE** Published by the Center for Biological Diversity http://www.biologicaldiversity.org/programs/public_lands/forests/clearcutting_and_climate_change/	Site-specific carbon and greenhouse gas emissions were analyzed in the *Project Scale Carbon Effects – Houston South Project Environmental Assessment* and summarized in the EA.
19-22	**Canada's Boreal Clearcutting Is a Climate Threat** By Joshua Axelrod, Policy Analyst, Canada Project, International program, November 1n 2017 https://www.nrdc.org/experts/josh-axelrod/canadas-boreal-clearcutting-climate-threat	Site-specific carbon and greenhouse gas emissions were analyzed in the *Project Scale Carbon Effects – Houston South Project Environmental Assessment* and summarized in the EA.
19-23	**Clearcut Logging Deminishes Shawnigan Lake Watershed** (sic) Published by the Watershed Sentinel, August 22, 2012 by Mary Desmond https://watershedsentinel.ca/articles/clearcut-logging-deminishes-shawnigan-lake-watershed/	Logging practices on private land in British Columbia has no relevance to the Houston South project.
19-24	**Clearcutting: Destroying America's Public Forests** Published by Save America's Forests Fund http://www.saveamericasforests.org/pages/educationcda.htm	This non-scientific article adds no value to the Houston South environmental analysis. Per the Forest Plan, clearcut harvests will be used when they are the optimum harvest method to achieve stated management objectives such as conversion of non-native pine to native hardwoods and providing habitat for early successional forest species.
19-25	**The environmental effects of a clearcut** Published by CSERC http://www.cserc.org/local-issues/forests/clearcuts-and-logging-issues/	Logging practices on private land in California has no relevance to the Houston South project.
19-26	**"Timberspeak" – Logging Spin and Propaganda** Published by Massachusetts Forest Watch http://www.maforests.org/Timberspeak-Timber_Industry_Propaganda.pdf	This article is an opinion piece from Massachusetts Forest Watch.
19-27	**Negative Effects of Clear-Cutting** By Phil Whitmer Published on Sciencing, April 25, 2017 https://sciencing.com/negative-effects-clearcutting-8194063.html	The provided link contains no information,
19-28	**Ontario's biologists called clear-cut logging plan 'big step backwards'** Published by the Toronto Star newspaper, January 17, 2015 https://www.thestar.com/news/canada/2015/01/17/provinces-biologists-called-clear-cut-logging-plan-big-step-backwards.html	This article discusses Ontario's provincial logging plan has no relevance to the Houston South project.

19-29	**NRDC Natural Resources Defense Council : Clearcutting in Canada's Boreal Forest Unleashes Unreported Carbon Dioxide Emissions, Worsening Climate Change** Published by 4-Traders, November 1, 2017 http://www.4-traders.com/news/NRDC-Natural-Resources-Defense-Council-Clearcutting-in-Canada-rsquo-s-Boreal-Forest-Unleashes-Unre--25415046/	Site-specific carbon and greenhouse gas emissions were analyzed in the *Project Scale Carbon Effects – Houston South Project Environmental Assessment* and summarized in the EA.
19-30	**Clearcutting is putting tourism at risk says President of Nova Scotia Tourism Industry Association** Published by Nova Scotia Forest Notes, September 22, 2017 http://nsforestnotes.ca/2017/09/22/clearcutting-is-putting-tourism-at-risk-says-president-of-nova-scotia-tourism-industry-association/	The tourism industry in Nova Scotia has no relevance to the Houston South project.
19-31	**Clearcutting: Destroying America's Public Forests** Save America's Forests Fund—Citizens Action Guide, http://www.saveamericasforests.org/pages/educationcda.htm	See 19-24
19-32	**Conservation groups sue Forest Service over secret clearcut on Beaverhead-Deerlodge National Forest** Alliance for the Wild Rockies, March 11, 2016 https://allianceforthewildrockies.org/conservation-groups-sue-forest-service-over-secret-clearcut-on-beaverhead-deerlodge-national-forest/	A lawsuit against the Forest Service in Montana has no relevance to the Houston South project.
19-33	**US Forest Service Moves to Start Clearcutting in Rim Fire Area --- Massive logging proposal threatens many spotted owls, currently thriving in the fire-affected acres of Stanislaus National Forest** Earth Island Journal, August 28, 2014 http://earthisland.org/journal/index.php/elist/eListRead/us_forest_service_moves_to_start_clearcutting_in_rim_fire_area/	A project on the Stanislaus National Forest has no relevance to the Houston South project.
19-34	**The Debate Over Clearcutting** ThoughtCo., June 4, 2017 https://www.thoughtco.com/clearcutting-the-debate-over-clearcutting-1343027	Per the Forest Plan, clearcut harvests will be used when they are the optimum harvest method to achieve stated management objectives such as conversion of non-native pine to native hardwoods and providing habitat for early successional forest species.

Literature citations referenced in Opposing Views–Attachment 26 (Artley)

Opposing View #	Cited Literature	Review/Response
26-1	"Below are Pictures of Units the USFS calls Clearcuts with Reserve Trees or Islands. The USFS tries to Trick the Public into Believing Clearcuts with Reserves and Islands are Visually Appealing and don't Resemble Clearcuts. Decide for yourself. Are you Proud?"	Commenter provided three images with no descriptions.
26-2	A professional landscape architect would refuse to be involved with a project having such clear visual destruction. Where would you pitch your tent?	See 26-1

Literature citations referenced in Opposing Views–Attachment 27 (Artley)

Opposing View #	Cited Literature	Review/Response
27-1	"The photos below show post-harvest conditions of logged areas of national forests. Incredibly, the sale names include the word "restoration." Ask yourself what resources are restored by the timber sale units shown below. Do you really believe these timber sales created healthier forests as the USFS claims? Isn't it time to come to grips with what you are doing? Does it make you proud to assault the Americans who enjoy recreating on their national forests?" Photo #1...Bulldog Restoration Project Photo #2...Clear Creek Restoration Project Photo #3...Crane Mountain Restoration Project Photo #4...Sedgelaw Restoration Project Photo #5...Bald Bear Restoration Project Photo #6...Heckler Restoration Project Photo #7...Lava Cast Restoration Project Photo #8...Upton Heights Restoration Project Photo #9...Elk RiverRestoration Project Photo #10...Crenshaw Restoration Project (note the landslide)	The provided images are from Forests of the western U.S., not in Region 9 or the Hoosier National Forest.

27-2	"Below are photos of cutting units located in national forests in R-1, R-5 and R-6. The sale names are unknown. Please identify the natural resources that have been "restored" and decide of the forest is healthier now or before it was logged and roaded."	See 27-1

Literature citations referenced in Opposing Views– Glyphosate Dangers

GLY-1	**France Bans Sale Of Monsanto Herbicide Roundup** Here's an excerpt from a recent (January 27, 2017) article published in *Your Newswire*. Link to entire article: http://yournewswire.com/france-bans-sale-of-monsanto-herbicide-roundup/	News piece does regarding weed-killer no longer available in garden centers in France. Does not add any new science.
GLY-2	**MONSANTO, EPA SEEK TO KEEP TALKS SECRET ON GLYPHOSATE CANCER REVIEW** Here's an excerpt from another recent (January 24, 2017) article published in Truthout. Link to entire article: http://www.truth-out.org/news/item/39197-monsanto-epa-seek-to-keep-talks-secret-on-glyphosate-cancer-review	News piece regarding legal efforts aimed at exploring Monsanto's influence over regulatory assessments of glyphosate. Does not add any new science.
GLY-3	**Why Glyphosate Should Be Banned – A Review of its Hazards to Health and the Environment** https://www.bloomberg.com/news/articles/2015-03-20/who-classifies-monsanto-s-glyphosate-as-probably-carcinogenic- http://permaculturenews.org/2012/11/01/why-glyphosate-should-be-banned-a-review-of-its-hazards-to-health-and-the-environment/	2015 article, news piece does not add any new science. 2012 article, news piece does not add any new science.
GLY-4	**Monsanto's Roundup linked to fatty liver disease** Published by: Nation of Change, January 11, 2017 : http://www.nationofchange.org/2017/01/11/monsantos-roundup-linked-fatty-liver-disease/	This article discusses "causative link between an environmentally relevant level of Roundup consumption over the long-term…" Not relevant to silvicultural applications (directly placing herbicide on the cambial tissue of trees), no foliar or broadcast application would be used.
GLY-5	**Monsanto undermines EPA's scientific review** Published by: Pesticide Action Network, December 8, 2016 http://www.panna.org/blog/monsanto-undermines-epas-scientific-review	Opinion piece questioning the integrity of the EPA, does not add any new science.

	http://www.ibtimes.com/monsanto-protection-act-5-terrifying-things-know-about-hr-933-provision-1156079	The second link discuses planting of controversial genetically modified or genetically engineered seeds.
GLY-6	**Roundup: Birth Defects Caused By World's Top-Selling Weedkiller, Scientists Say** The Huffington Post, August 24, 2011 http://www.huffingtonpost.com/2011/06/24/roundup-scientists-birth-defects_n_883578.html	This article discusses Roundup in the context of agriculture, not silvicultural applications (directly placing herbicide on the cambial tissue of trees).
GLY-7	**Lab Study Establishes Glyphosate Link to Birth Defects** Institute of Science in Society, April 10, 2010 http://www.i-sis.org.uk/glyphosateCausesBirthDefects.php	The Carrasco studies are not relevant to project because South American formulations used, "embryos were incubated with high dilutions of a commercial glyphosate-based herbicide" and "embryos were injected with pure glyphosate." Houston South proposes silvicultural applications (directly placing herbicide on the cambial tissue of trees).
GLY-8	**The inside story on Monsanto and the glyphosate birth defect data** The Ecologist, June 13, 2011 https://theecologist.org/2011/jun/13/inside-story-monsanto-and-glyphosate-birth-defect-data	The author of this article claims the pesticide industry and regulators have repeatedly misled the public with claims that glyphosate is safe. Houston South proposes silvicultural applications (directly placing herbicide on the cambial tissue of trees).
GLY-9	**Monsanto's Roundup Herbicide Threatens Public Health** Rachel's Environment and Health News, issue 751, Sept. 5, 2002. Reprinted by Organic Consumers Association, September 25, 2001 http://www.organicconsumers.org/Monsanto/roundup92502.cfm	The link to this webpage is broken. To the extent that excerpted sections of the cited document can be evaluated: The comment does not dispute any specific aspect of the Houston South environmental analysis. The news article from which the comment was excerpted does not represent peer-reviewed science. This article is about effects of the product Roundup on farm families. The Proposed Action does not include the application of Roundup to food crops for agricultural purposes.
GLY-10	**Is Glyphosate Responsible for your Health Problems?** from Health Impact News, December 6, 2015 http://healthimpactnews.com/2014/is-glyphosate-responsible-for-your-health-problems/	This article discusses glyphosate in food and agricultural uses. It provides no new information on silvicultural applications.

GLY-11	**Glyphosate Weedkiller in Our Food and Water?** from Infowars, June 17, 2013 http://www.infowars.com/glyphosate-weedkiller-in-our-food-and-water/	This article discusses glyphosate in food and agricultural uses. It provides no new information on silvicultural applications.
GLY-12	**Glyphosate, pathways to modern diseases II: Celiac sprue and gluten intolerance.** From Interdisiplinary Toxicology, 2013 Dec;6(4):159-84. doi: 10.2478/intox-2013-0026 http://www.ncbi.nlm.nih.gov/pubmed/24678255	This article discusses consumption of glyphosate residue. Not relevant to silvicultural applications.
GLY-13	**Roundup and Glyphosate Toxicity Have Been Grossly Underestimated** http://articles.mercola.com/sites/articles/archive/2013/07/30/glyphosate-toxicity.aspx#	This article discusses glyphosate in food and agricultural uses and lawn application. It provides no new information on silvicultural applications.
GLY-14	**RoundUp--Lymphoma Connection** From a June 22, 1999 Press Release by Sadhbh O' Neill, author of Genetic Concern. http://www.naturescountrystore.com/roundup/page8.html	This article discusses consumption of glyphosate residue. Not relevant to silvicultural applications.
GLY-15	**"RoundUp Ready" nears end of the line...** From GroundTruth, July 7, 2014 http://www.panna.org/blog/roundup-ready-nears-end-line	This article discusses genetically engineered crops and herbicide-resistant crop technology
GLY-16	**Study: Glyphosate Doubles Risk of Lymphoma** From AgMag BLOG, May 23, 2014 http://www.ewg.org/agmag/2014/05/study-glyphosate-doubles-risk-lymphoma	This article speaks to the consumption of genetically engineered crops.
GLY-17	**Cytotoxic and DNA-damaging properties of glyphosate and Roundup in human-derived buccal epithelial cells.** From Arch Toxicol. 2012 May;86(5):805-13. doi: 10.1007/s00204-012-0804-8. Epub 2012 Feb 14. http://www.ncbi.nlm.nih.gov/pubmed/22331240	The Hoosier does not use Roundup UltraMax, the herbicide tested in the study and showed increased DNA dissociation and mitochondrial damage due it's surfactant composition. Additionally, the glyphosate-only trials in this study are at least twice the concentration of that used on the Forest. The buccal epithelia cells in the study were directly in contact with each herbicide formulation without any wind/sunlight/moisture variation. In our current application settings, we are exposed to these factors which decrease our likelihood of prolonged direct exposure.
GLY-18	**Roundup is tied to infertility and cancer; herbicide's maker calls it safe** Published in the Washington Post, April 29, 2013 By Carey Gillam	This article discusses glyphosate in food and agricultural uses. It does not provide information on silvicultural applications.

	https://www.washingtonpost.com/national/health-science/roundup-is-tied-to-infertility-and-cancer-herbicides-maker-calls-it-safe/2013/04/29/ac86ced6-ae71-11e2-98ef-d1072ed3cc27_story.html	
GLY-19	**Glyphosate Toxic to Mouth Cells & Damages DNA, Roundup Much Worse** From an Institute of Science Publication, March 3, 2012 http://www.i-sis.org.uk/Glyphosate_Toxic_to_Mouth_Cells.php	The Hoosier does not use Roundup UltraMax, the herbicide tested in the study.
GLY-20	**Evaluation of DNA damage in an Ecuadorian population exposed to glyphosate** from Genetics and Molecular Biology, 30, 2, 456-460 (2007) http://www.scielo.br/pdf/gmb/v30n2/a26v30n2.pdf	Aerial spraying is not proposed.
GLY-21	**Monsanto's Roundup is Causing DNA Damage** from Natural Society, March 30, 2012 http://naturalsociety.com/monsantos-roundup-is-causing-dna-damage/	The Hoosier does not use Roundup UltraMax,
GLY-22	**Roundup: The "Safe" Garden Product that Can Destroy Your DNA** from Mercola.com, March 13, 2012 http://articles.mercola.com/sites/articles/archive/2012/03/13/active-ingredient-glyphosate-in-roundup-herbicides-found-in-peoples-urine.aspx	This article discusses glyphosate in food and agricultural uses. It does not provide information on silvicultural applications.
GLY-23	**Carcinogenic Glyphosate Linked to DNA Damage as Residues are found in Bread** from Beyond Pesticides, July 22, 2015 http://beyondpesticides.org/dailynewsblog/2015/07/carcinogenic-glyphosate-linked-to-dna-damage-as-residues-are-found-in-bread/	This article is focused on glyphosate in the food supply from agricultural practices.
GLY-24	**The Hidden Dangers of Roundup** From Natural News, February 05, 2009 http://www.naturalnews.com/025534_Roundup_research_toxic.html	This article discusses glyphosate in the context of GMO agriculture.
GLY-25	**Endocrine disruption and cytotoxicity of glyphosate and roundup** in human JAr cells in vitro from Integr Pharm Toxicol Gentocicol, 2015 doi: 10.15761/IPTG.1000104 http://www.gmoevidence.com/wp-content/uploads/2015/03/IPTG-1-104.pdf	The two Roundup formulations used in this study were generically termed 'Regular Roundup Weedkiller' and 'Roundup Concentrate Weedkiller'. It is difficult to compare the these to the herbicides used by the Forest. Furthermore, no herbicide should enter any waterway from the silvicultural treatments proposed by the Houston South project.
GLY-26	**Roundup Weed Killer Dangers** from Garden Guides.com, January 2013 http://www.gardenguides.com/127538-roundup-weed-killer-dangers.html	This article discusses the potential dangers of glyphosate in Roundup. All employees or contractors that apply herbicides on the Hoosier National Forest are either licensed by the Office of Indiana State Chemist or

		under the direct supervision of someone who is. The Forest uses only EPA approved non-restricted herbicides and follows all EPA and label directions.
GLY-27	**Monsanto's Roundup is Causing DNA and Cellular Damage** from Health and Wellness, March 30, 2012 http://www.sott.net/article/243580-Monsantos-Roundup-is-Causing-DNA-and-Cellular-Damage	The Hoosier does not use Roundup UltraMax.
GLY-28	**MIT Researcher: Glyphosate Herbicide will Cause Half of All Children to Have Autism by 2025** Posted on December 23, 2014 at: Alliance for Natural Health http://healthimpactnews.com/2014/mit-researcher-glyphosate-herbicide-will-cause-half-of-all-children-to-have-autism-by-2025/ http://circleofdocs.com/community/topic/4106-mit-researcher-glyphosate-herbicide-will-cause-half-of-all-children-to-have-autism-by-2025/ http://www.livingforlonger.com/mit-researcher-glyphosate-herbicide-will-cause-half-of-all-children-to-have-autism-by-2025/ http://sensoryswim.com/autism-roundup http://www.infowars.com/half-of-all-children-will-be-autistic-by-2025-warns-senior-research-scientist-at-mit/ http://robinwestenra.blogspot.com/2015/02/warning-half-of-all-children-will-be.html http://www.medicaldaily.com/autism-rates-increase-2025-glyphosate-herbicide-may-be-responsible-future-half-316388 http://www.vibrationsofhealth.com/gmos-will-cause-half-of-all-children-to-be-autistic-by-2025/2/ (+33)	These articles state the rise in autism is from the use of Roundup on crops and the creation of Roundup-ready GMO crop seeds. Houston South proposes silvicultural applications (directly placing herbicide on the cambial tissue of trees).
GLY-29	**GMO's & Neurological Disease: ADHD, Autism, Alzheimer's, Schizophrenia, Bipolar** From Health and Wellness, October 8, 2013 http://www.sott.net/article/267227-GMOs-Neurological-Disease-ADHD-Autism-Alzheimers-Schizophrenia-Bipolar	This article discusses glyphosate in the context of agriculture and genetically engineered crops.

GLY-30	**Roundup herbicide linked to Parkinson's-related brain damage** from Health, April 21, 2012 http://www.digitaljournal.com/article/323391	This article discusses neurodegenerative disorders linked to glyphosate by various studies. The Forest uses only EPA approved non-restricted herbicides and follows all EPA and label directions. The Houston South proposes silvicultural applications (directly placing herbicide on the cambial tissue of trees).
GLY-31	**Neurotoxins?** from the Detox Project sponsored by the World Health Organization, 2015 http://detoxproject.org/glyphosate/neurological-disease/	See GLY-30 above.
GLY-32	**Unique Gene Expression Study Shows Roundup Causes Massive Kidney and Liver Damage at Low Doses** From Sustainable Pulse, Aug 26, 2015 http://sustainablepulse.com/2015/08/26/unique-roundup-study-shows-massive-kidney-and-liver-gene-function-alterations/#.Vd8p0Zbn_IX	This article discusses a study that administered a commercial Roundup formulation at 0.1 ppb (parts per billion)/50 ppt (parts per trillion) glyphosate via drinking water for 2 years and a follow-up study that investigated whether heightened liver and kidney pathology observed at an anatomical and biochemical level was reflected in the gene expression pattern. There is a very low chance of consumption of Roundup resulting from the proposed silvicultural applications (directly placing herbicide on the cambial tissue of trees).
GLY-33	**More evidence of Roundup's link to kidney, liver damage** From Environmental Health News, September 1, 2015 http://www.environmentalhealthnews.org/ehs/news/2015/aug/monsanto-roundup-glyphosate-pesticide-kidney-liver-toxic-gmo	Provided link did not go to article.
GLY-34	**MONSANTO'S HERBICIDE LINKED TO FATAL KIDNEY DISEASE** EPIDEMIC: COULD IT TOPPLE THE COMPANY? from Truthout, July 10, 2014 http://www.truth-out.org/news/item/24876-monsantos-herbicide-linked-to-fatal-kidney-disease-epidemic-will-ckdu-topple-monsanto (+20)	Not relevant, information does not involve USA formulations or relevant use of glyphosate. See GLY-32
GLY-35	**Monsanto's Roundup, Glyphosate Linked to Parkinson's and Similar Diseases** From Natural Society, October 30, 2012 http://naturalsociety.com/monsantos-roundup-glyphosate-parkinsons-neurodegenerative/	See GLY-30

GLY-36	**Roundup, An Herbicide, Could Be Linked To Parkinson's, Cancer And Other Health Issues, Study Shows** From Huffington Post, January 25, 2013 http://www.huffingtonpost.com/2013/04/25/roundup-herbicide-health-issues-disease_n_3156575.html	This article discusses consumption of glyphosate residue. Not relevant to silvicultural applications.
GLY-37	**Pesticides and herbicides like glyphosate now strongly linked to Parkinson's disease and other neurological disorders** From Natural News, March 8, 2016 http://www.naturalnews.com/053226_herbicides_gene_expression_Parkinsons.html	This article discusses herbicides in the context of agriculture and food production.
GLY-38	**Roundup herbicide linked to Parkinson's-related brain damage** From the National Parkinson Foundation, April 21, 2012 http://forum.parkinson.org/index.php?/topic/12649-roundup-herbicide-linked-to-parkinson%e2%80%99s-related-brain-damage/	See GLY-30
GLY-39	**Monsanto's Roundup Weedkiller Linked to Alzheimer's, Parkinson's and ALS** From Alternet, July 19, 2016 http://www.alternet.org/food/monsantos-roundup-weedkiller-changes-dna-function-causing-chronic-disease	See GLY-26 and GLY-30
GLY-40	**Monsanto's Roundup, Glyphosate Linked to Parkinson's and Similar Diseases** From Reader Supported News, October 13, 2012 http://readersupportednews.org/news-section2/312-16/14279-monsantos-roundup-glyphosate-linked-to-parkinsons-and-similar-diseases	See GLY-30
GLY-41	**Concerns Over Glyphosate Use** Published in The Sun (Malaysia), Friday August 20, 1999 http://www.poptel.org.uk/panap/archives/glywb.htm	Unable to open the provided link.
GLY-42	**Photo images of glyphosate and children**	Not relevant to silvicultural applications.
GLY-43	**Are Your Children Roundup-Ready?** Published by the Cornucopia Institute, October 1, 2015 http://www.cornucopia.org/2015/10/are-your-children-roundup-ready/	This article discusses herbicides in the context of agriculture and food production.
GLY-44	**Alleged Glyphosate Poisoning Kills 2 Children, 33 More in Hospital** Published by Natural Society, August 2, 2014 http://naturalsociety.com/alleged-glyphosate-poisoning-kills-2-children-33-hospital/	This news piece discusses the effects in "areas where heavy pesticide spraying is conducted" in agricultural settings in Paraguay and is not relevant to silvicultural applications proposed in the Houston South project.
GLY-45	**Glyphosate toxicity – impacts on the environment and non-target species** Published by the Pemaculture College Australia http://permaculture.com.au/glyphosate-toxicity-impacts-on-the-environment-and-non-target-species/	The impacts discussed in this article would be avoided because herbicides would be directly placed on the cambial tissue of trees and by using only EPA approved non-restricted

		herbicides and following all EPA and label directions.
GLY-46	**Monsanto Has Been Removed And Banned By: Austria, Bulgaria, Germany, Greece, Hungary, Ireland, Japan, Luxembourg, Madeira, New Zealand, Peru, South Australia, Russia, France, and Switzerland!** Published by Political Vel Craft, March 23, 2013 https://politicalvelcraft.org/2013/03/23/monsanto-has-been-removed-and-banned-by-austria-bulgaria-germany-greece-hungary-ireland-japan-luxembourg-madeira-new-zealand-peru-south-australia-russia-france-and-switzerland/	This opinion pieces discusses GMOs.
GLY-47	**El Salvador bans glyphosate** Published by Natural News, October 22, 2013 http://www.naturalnews.com/042608_El_Salvador_glyphosate_ban_Monsanto.html#	This article discusses GMO agriculture.
GLY-48	**Sri Lanka bans leading Monsanto herbicide citing deadly disease fears** Published by The International Consortium of Investigative Journalists, March 14, 2014 https://www.icij.org/blog/2014/03/sri-lanka-bans-leading-monsanto-herbicide-citing-deadly-disease-fears	Not relevant information, does not involve USA formulations or relevant use of glyphosate; article states "…study does not include laboratory or field tests and appeared in a little-known "open access" journal in which publishing fees are paid by the authors."
GLY-49	**France Bans the World's Leading Herbicide From Garden Stores** Published by Takepart, June 15, 2015 http://www.takepart.com/article/2015/06/15/france-bans-herbicide	In April 2019, EPA released the Glyphosate Proposed Interim Decision for public comment. As part of this action, EPA continues to find that there are no risks to public health when glyphosate is used in accordance with its current label and that glyphosate is not a carcinogen."
GLY-50	**On the Offensive' Against Monsanto, France Removes Roundup from Store Shelves** Published by Common Dreams, June 15, 2015 http://www.commondreams.org/news/2015/06/15/offensive-against-monsanto-france-removes-roundup-store-shelves	See GLY-49
GLY-51	**Dutch Ban Roundup, France and Brazil to Follow** Published by The Healthy Home Economist http://www.thehealthyhomeeconomist.com/roundup-banned-netherlands-france-brazil-likely-soon-follow/	See GLY-49
GLY-52	**5 Countries That are Throwing Monsanto Out on its Ass** Published by Ultraculture http://ultraculture.org/blog/2014/04/01/5-countries-throwing-monsanto-ass/	See GLY-49
GLY-53	**The Netherlands Says "No" to Monsanto, Bans RoundUp Herbicide** Published by Inhabitat, September 29, 2014	See GLY-49

	http://inhabitat.com/the-netherlands-says-no-to-monsanto-bans-roundup-herbicide/	
GLY-54	**3 More European Countries Begin Banning Glyphosate and Monsanto's Roundup** Published by ANTI MEDIA, June 24, 2015 http://theantimedia.org/more-european-countries-banning-glyphosate-monsantos-roundup/	See GLY-49
GLY-55	**GLyphosate (Round UP) is Banned in DENMARK and will be banned in Brazil and France** Published by Lanka Newspapers http://www.lankanewspapers.com/news/2014/9/89870_space.html	See GLY-49
GLY-56	**California Classifies Glyphosate As Cancer-Causing, FDA Tests Crops For Residue** Published by CBS SF Bay Area, July 7, 2017 http://sanfrancisco.cbslocal.com/2017/07/07/california-glyphosate-monsanto-cancer-causing-fda-crops/	See GLY-49
GLY-57	**Glyphosate causes cancer, rules California -- All California retailers are required to add cancer warning labels to all products containing glyphosate from July 7, 2017** Published by Pgurus, July 15, 2017 https://www.pgurus.com/glyphosate-causes-cancer-california/	See GLY-49
GLY-58	**Monsanto Is Suing California for Trying to Inform People That Roundup Causes Cancer** Published by Alternet, March 2, 2016 http://www.alternet.org/environment/monsanto-suing-california-trying-inform-people-roundup-causes-cancer	See GLY-49